CLAIMS

1. A method for treating or preventing an abnormal condition in an organism, wherein said abnormal condition is associated with an aberration in a signal transduction pathway mediated by a *c-kit* kinase, wherein said method comprises the step of administering to said organism a therapeutically effective amount of an indolinone compound that modulates, *in vitro*, the catalytic activity of *c-kit* kinase.

2. The method of claim 1 wherein said aberration in said signal transduction pathway is mediated by an interaction between said *c-kit* kinase and a natural binding partner, and said indolinone compound modulates, *in vitro*, the interaction between said *c-kit* kinase and said natural binding partner.

3. The method of claim 1 wherein said abnormal condition is a disease related to inappropriate *c-kit* kinase signal transduction.

4. The method of claim 1, wherein said abnormal condition is selected from the group consisting of mastocytosis, the presence of one or more mast cell tumors, asthma, and allergy associated chronic rhinitis.

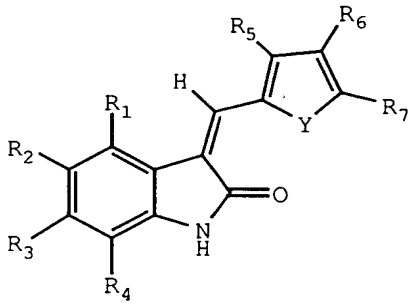
5. The method of claim 1, wherein said abnormal condition is selected from the group consisting of small cell lung cancer, non-small cell lung cancer, acute myelocytic leukemia, acute lymphocytic leukemia, myelodysplastic syndrome, chronic myelogenous leukemia, a colorectal carcinoma, a gastric carcinoma, a gastrointestinal stromal tumor, a testicular cancer, a glioblastoma, and an astrocytoma.

6. The method of claim 1 wherein said organism is a mammal.

7. The method of claim 1 wherein said organism is a human.

8. The method of any one of claims 1, 2 and 3 wherein said indolinone compound is a compound of the structure set forth in Formula I:

(I)



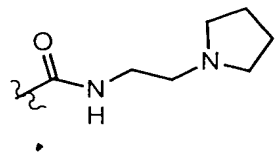
wherein

(a) Y is selected from the group consisting of oxygen, sulfur and nitrogen substituted with a hydrogen;

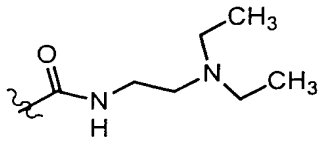
(b) R_1, R_2, R_3, and R_4 are each independently selected from the group consisting of hydrogen, alkyl, alkoxy, aryl, aryloxy, alkaryl, alkaryloxy, halogen, trihalomethyl, S(O)R, SO_2 NRR', SO_3R, SR, NO_2, NRR', OH, CN, C(O)R, OC(O)R, NHC(O)R, $(CH_2)_n$ CO_2 R, and CONRR';

(c) R_5 is selected from the group consisting of hydrogen, alkyl, alkoxy, aryl, aryloxy, alkaryl, alkaryloxy, halogen, trihalomethyl, S(O)R, SO_2 NRR', SO_3R, SR, NO_2, NRR', OH, CN, C(O)R, OC(O)R, NHC(O)R, $(CH_2)_n$ CO_2 R, CONRR', a six-membered heteroaryl ring system containing 1 or 2 N, O, or S atoms; and a six-membered aryl ring system; and

(d) R_6, and R_7 are each independently selected from the group consisting of hydrogen, alkyl, alkoxy, aryl, aryloxy, alkaryl, alkaryloxy, halogen, trihalomethyl, S(O)R, SO_2 NRR', SO_3R, SR, NO_2, NRR', OH, CN, C(O)R, OC(O)R, NHC(O)R, $(CH_2)_n$ CO_2 R, and CONRR',

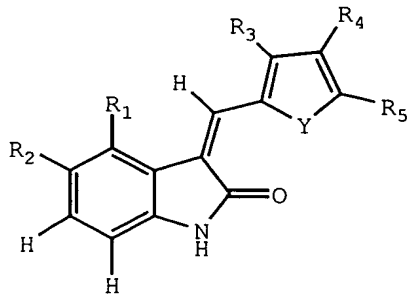


and



9. The method of any one of claims 1, 2 and 3 wherein said indolinone compound is a compound of the structure set forth in Formula II:

(II)



wherein

(a) Y is selected from the group consisting of sulfur and nitrogen substituted with a hydrogen;

(b) R_1 is independently selected from the group consisting of hydrogen and methyl;

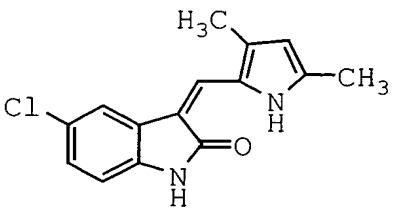
(c) R_2 is independently selected from the group consisting of hydrogen, chlorine, bromine, $-C(O)CH_3$, $-SO_2NH_2$, and $SO_2N(CH_3)_2$;

(d) R_3 is independently selected from the group consisting of hydrogen, methyl, and $-CH_2CH_2COOH$; and

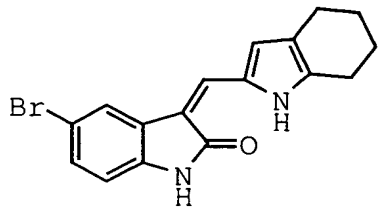
(e) R_4 and R_5 are independently selected from the group consisting of hydrogen, methyl, $-CH_2CH_2COOH$, and substituents that when taken together form a six-membered aliphatic or aromatic ring.

10. The method of any one of claims 1, 2 and 3 wherein said indolinone compound is selected from the group consisting of compounds

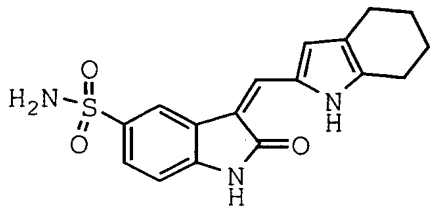
(IV)



(V)



(VI)



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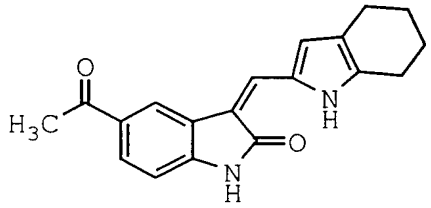
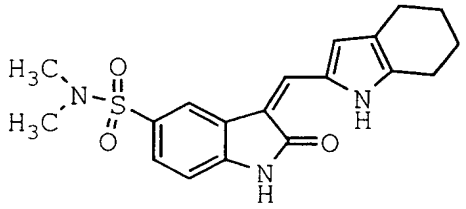


(VIII)



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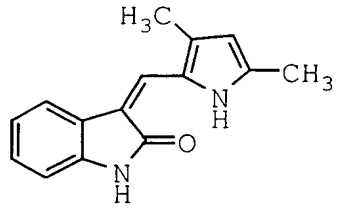
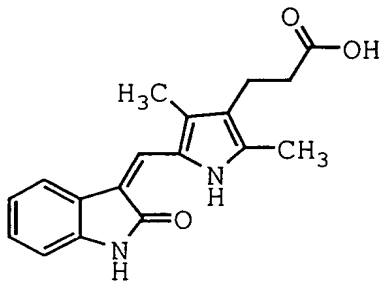
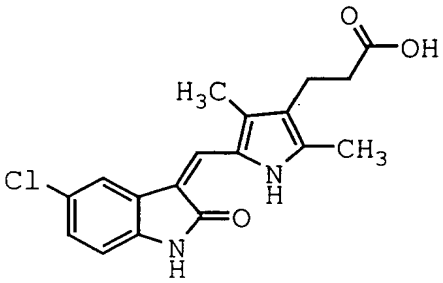


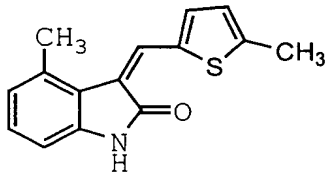
(X)



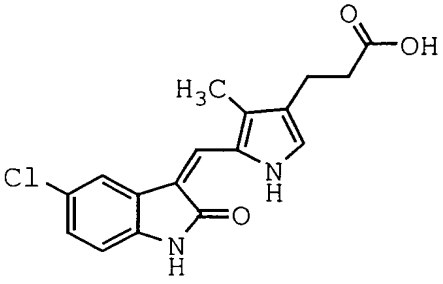
(XI)



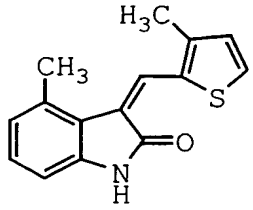
(XII)



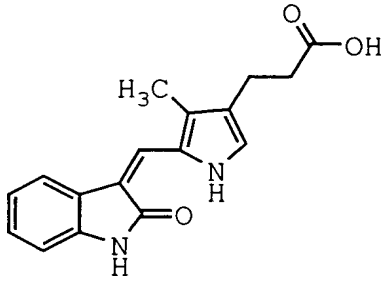
(XIII)



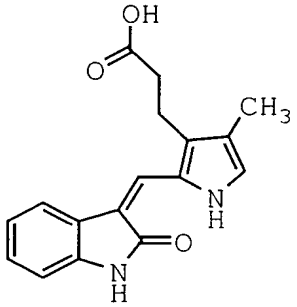
(XIV)



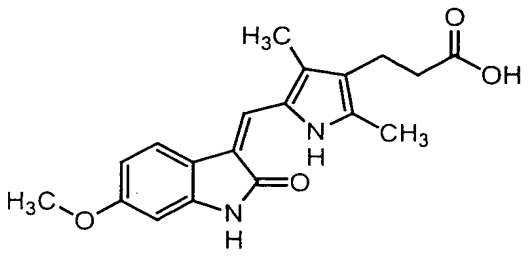
(XV)



(XVI)



(XVII)



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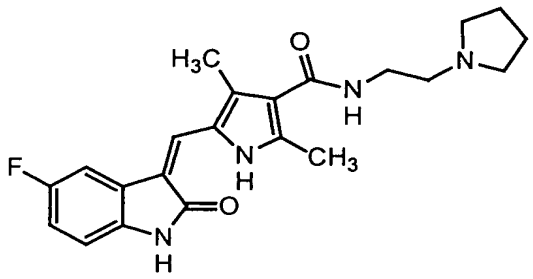

and XVIX